



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

re the Application of

Takamitsu ASANUMA

Group Art Unit: 3748

Application No.: 10/560,733

Examiner: L. EDWARDS

Filed: December 15, 2005

Docket No.: 126277

For: EXHAUST GAS CONTROL APPARATUS FOR INTERNAL COMBUSTION
ENGINESUPPLEMENTAL INFORMATION DISCLOSURE STATEMENTCommissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR §1.56, the attention of the Patent and Trademark Office is hereby directed to Reference 1 of the PTO Form 1449 filed concurrently with the Information Disclosure Statement on July 25, 2007. It is respectfully requested that this reference be expressly considered in view of the attached partial English-language translation, which provides a further explanation of potential relevance of the reference.

Respectfully submitted,


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Date: July 27, 2007

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[Effect]



A flow of a measured fluid is first separated to flow into branch passages in the number corresponding to the number of components to be analyzed by branch supply means M2. With respect to the measured fluid in a certain branch passage among the separated branch passages, reaction means M3 converts a certain component contained in the measured fluid in the certain branch passage into other component. For example, hydrogen sulfide contained in exhaust gas discharged from an internal combustion engine is caused to react with oxygen such that hydrogen sulfide is converted into sulfur dioxide.

Next, content measurement means M1 measures a content of a certain component contained in the measured fluid that is directly supplied by the branch supply means M2 or supplied by the branch supply means M2 through the reaction means M3.

For example, if hydrogen sulfide has been converted into sulfur dioxide through a chemical reaction by the reaction means M3 before reaching the content measurement means M1, the content measurement means M1 measures the content of sulfur dioxide. The value thus measured corresponds to the total content of sulfur dioxide that exists from the beginning and hydrogen sulfide. Further, other content measurement means M1 than mentioned above measures the content of sulfur dioxide that exists from the beginning only without any reaction means, and therefore the content of sulfur dioxide only is also measured.

Accordingly, if calculation means M4 performs subtraction in consideration of a chemical equation based on the data with respect to the content of sulfur dioxide only and the total content of sulfur dioxide and hydrogen sulfide obtained through the content measurement means M1, the content of hydrogen sulfide can be obtained. For example, the content measurement means M1 measures the contents of components in the molar amount or at the molar concentration, the content of hydrogen sulfide only can be obtained by simply subtracting the content of sulfur dioxide only from the total content of sulfur dioxide and hydrogen sulfide.